

Long Timescale Sequence Recognition Using Adaptive Neural Networks

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Submitter Samuel Pavo Muscinelli

Affiliation École Polytechnique Fédérale de Lausanne

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Presentation Abstract Summary The ability of humans and some animals to integrate information over long time scales is fundamental for many tasks, including sequence recognition. Biologically plausible neural networks however, can maintain memory traces whose length scales poorly with the number of neurons. Here we show how a rate network equipped with adaptation on a slower time scale can perform sequence recognition tasks that require integration of information over time scales longer than the one of adaptation itself, in a way that goes beyond simple signal filtering. This results show how the complex interaction between neuronal dynamics and slow biological processes can help bridging the gap between behavioral and neural time scales.

Paper Upload (PDF) [abstract.pdf](#)

Co-author Information

* Presenting Author

| First Name | Last Name | Affiliation | E-mail |
|---------------|--------------|---|---------------------------|
| Samuel Pavo * | Muscinelli * | École Polytechnique Fédérale de Lausanne | samuel.muscinelli@epfl.ch |
| Wulfram | Gerstner | École Polytechnique Fédérale de Lausanne | wulfram.gerstner@epfl.ch |

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